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Manitoba

Agriculture

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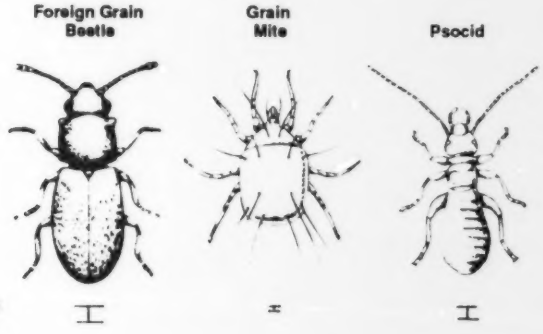
Pest Facts

Prevention and Control of Insects and Mites in Farm Stored Grain

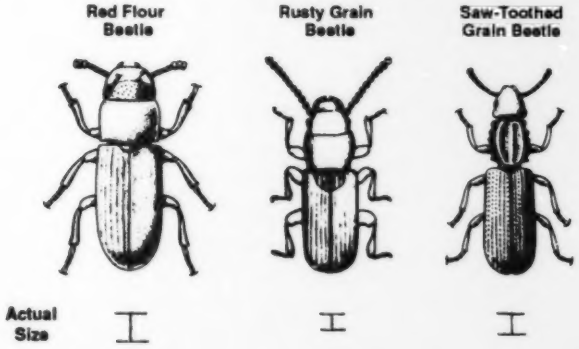
Identification

There are two principle types of pests found in farm stored grain: fungus feeding pests and grain feeding pests.

Fungus Feeding Pests include fungus beetles, grain mites and psocids. They do not live in sound, dry grain. Their appearance is a sign that your grain is is going out of condition.



Grain Feeding Pests include the rusty grain beetle, the saw-toothed grain beetle and the red flour beetle. These pests live in sound dry grain.



Pest identification is important since the method of control depends on the pest. For identification and control recommendations, send pest specimens to your local agricultural office or:

Entomology Section
Technical Services and Training Branch
Manitoba Department of Agriculture
Room 911 Norquay Building
401 York Avenue
Winnipeg, Manitoba
R3C 0P8

Prevention Measures

- Clean up and burn or bury any grain spilled when bins are filled or emptied. Spillage is an excellent breeding site for grain insects.
- To prevent insect breeding, destroy grain residues left after grain has been removed from piles or temporary storage.
- Initiate a granary clean-up program that includes:
  - — repairs and weatherproofing
  - — cleaning and burning or burying sweepings to prevent insect breeding
  - — thoroughly spraying the granary with mixture of 60 mL (1/2 pt.) malathion 50% EC in 4 L (1 gal.) water. Apply the mixture at rate of 5 L/100m^2 (1 gal./1,000 sq. ft.) or to the point of runoff.
  - — cleaning and spraying the area below perforated floors in bins with air drying systems.
- Frequently examine stored grain for signs of crusting or spoiling and break any crusted areas.
- Place metal rods in grain bulk and inspect every 3 to 4 weeks for signs of heating.

Control Measures for Fungus Feeding Pests

Make sure the grain is in good storage condition by:

- removing crusted areas and hot spots
- burning or burying discarded grain

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- drying grain, if necessary.

Chemical control of fungus feeding pests is not necessary since they cannot survive in sound, dry grain.

Chemical Control of Grain Feeding Pests

For effective chemical control make sure the grain is in good storage condition. Follow the three recommendations detailed for fungus feeding pest control. Then, fumigate or apply a grain protectant.

Fumigants

Fumigants are extremely poisonous and should be applied with great care.

Solid Fumigants: Solid fumigants containing phosphine gas are available under several trade names in pellet or tablet form. Tablets and pellets have a wax coating that prevents the release of the fumigant for 4 hours after the container is opened.

APPLICATION: Inject the tablets or pellets into the grain bulk using a pipe or incorporate as the grain is augered into the bin according to label directions.

Grain Temperature	Fumigation Period
4°C-12°C	10 days
12°C-15°C	5 days
16°C-20°C	4 days

CAUTION: Use solid fumigants only when the grain temperature is above 4°C.

Safety Recommendations

- Seal granary.
- Post warning signs.
- Wear rubber gloves and a full face respirator with an approved canister.
- Work in pairs and follow recommendations and warnings detailed on the container label.
- Ventilate bins for 13 days to reduce hazard to grain handlers.

Control by Cold Temperatures

- Rusty grain beetles and other stored grain insects can be killed by periods of cold temperatures as follows:

Grain Temperature	Time Required to Kill Insects
-5°C	6 weeks
-10°C	4 weeks
-15°C	2 weeks

- Grain temperatures can be lowered by aeration.
- Moving grain several times during cold weather may lower temperatures enough to kill insects.

All recommendations contained in this factsheet are valid for 1990-91.

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